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MRID No. 431932-30

AC 229663=
Imazamox 129171

DATA EVALUATION RECORD

1. **CHEMICAL:** AC 229,263
Shaughnessey No. 128847.

2. **TEST MATERIAL:** AC 229,263 technical; lot no. AC 6935-63; 97.1% active ingredient; a white powder.

3. **STUDY TYPE:** 72-1(a). Freshwater Fish Acute Toxicity Test. Species Tested: Bluegill sunfish (*Lepomis macrochirus*)

4. **CITATION:** Yurk, J.J. and J.D. Wisk. 1994. Acute Toxicity of AC 299,263 to Bluegill Sunfish (*Lepomis macrochirus*) Under Flow-Through Test Conditions. Laboratory Project ID No. 3933010-0440-3140. Prepared by Environmental Science & Engineering, Inc. Submitted by American Cyanamid Company, Princeton, NJ. EPA MRID No. 431932-30.

5. **REVIEWED BY:**

F. Nicholas Mastrota
Biologist
OPP/EFED/EEB
USEPA

Signature: F. Nicholas Mastrota
Date: Nov 16, 2004

6. **APPROVED BY:**

Daniel D. Rieder
Head, Section 3
OPP/EFED/EEB
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Signature:
Date: 11/16/04

7. **CONCLUSIONS:** This study is scientifically sound and meets the guideline requirements for an acute toxicity test using a warmwater fish [guideline no. 72-1(a)]. Based on mean measured concentrations, the 96-hour LC_{50} of AC 299,263 was >119 mg ai/L, classifying this chemical as practically nontoxic to the bluegill sunfish. The NOEC was 119 mg ai/l.

8. **RECOMMENDATIONS:** N/A.

9. **BACKGROUND:**

10. **DISCUSSION OF INDIVIDUAL TESTS:** N/A.

11. **MATERIALS AND METHODS:**

A. **Test Animals:** Juvenile bluegill sunfish (*Lepomis macrochirus*) were obtained from Shongaloo Fisheries, Inc. in Hampton, FL. The fish were fed live brine shrimp nauplii. The fish showed no sign of disease or stress during the 48 hours prior to testing.

Weights of a representative sample of sunfish at the start of the test ranged from 0.33 to 0.58 g. Their standard lengths ranged from 23 to 29 mm.

B. **Test System:** Filtered well water was used for the dilution water. The water had hardness of 274-276 mg/L as $CaCo_3$ and pH of 7.5-7.9. A semi-annual chemical analysis showed that the water was not contaminated by metals, PCB's, organochlorines, or organophosphates. Stock solution was prepared by dissolving the appropriate amount of test substance into the dilution water without the use of a solvent.

The definitive test was conducted under flow-through conditions using a proportional dilution system. The 10.6 L glass test chambers were filled with approximately 5 L of dilution water or test solution. The flow rate was approximately 5.29 volume additions every 24 hours. Test chambers were kept in a water bath under fluorescent lighting. The photoperiod was 16 hours light and 8 hours dark with a 30 min transition period between light and dark.

C. **Dosage:** Based on a range-finding test, five nominal concentrations [15.6, 25.9, 43.2, 72.0, and 120 mg active ingredient (ai)/l] and a dilution water control were selected for testing.

D. **Design:** Ten fish were indiscriminately added to each test chamber. Two replicate test chambers were used at each test level. All chambers were observed once every 24 hours for mortality and sublethal effects. Dead fish were removed from the chambers at each observation period. Test organisms were not fed and the solutions were not aerated during the test.

Temperature was measured continuously in one test chamber and daily in all test chambers. Dissolved oxygen concentration (DO) and pH were measured daily in each test chamber.

Samples of the control and treatment solutions were taken at test initiation and termination for detection of the test material using high performance liquid chromatography (HPLC).

E. Statistics: Statistical analysis was not conducted due to the lack of response to the test substance.

12. REPORTED RESULTS: Mean measured concentrations were determined to be 17.1, 26.1, 40.6, 69.9, and 119 mg ai/l which represent values of 92% to 108% of nominal (Table 4, attached).

Throughout the test, the DO ranged from 6.9 to 8.1 mg/l or 81-93% of saturation. The pH values ranged from 7.5 to 7.8, and the temperature ranged from 21.4 to 22.0°C.

No mortality occurred at any of the control or test levels during the 96 hours of the test. Also, no sublethal effects were observed. The 96-hour LC_{50} for AC 299,263 was determined to be > 119 mg ai/L, and the 96-hour no-observed-effect-concentration (NOEC) was determined to be 119 mg ai/L.

13. STUDY AUTHOR'S CONCLUSIONS/QUALITY ASSURANCE MEASURES: The author presented no conclusions other than the results mentioned above.

Quality Assurance and Good Laboratory Compliance Statements were included in the report, indicating that the study was conducted in accordance with EPA Good Laboratory Practice standards (40 CFR Part 160).

14. REVIEWER'S DISCUSSION AND INTERPRETATION OF STUDY RESULTS:

A. Test Procedure: The test procedures were generally in accordance with the SEP, except for the following:

1. The report did not mention if the fish were acclimated to the dilution water prior to the test. The SEP recommends an acclimation period of least two weeks.

2. Some of the fish weighed slightly less than the range of individual weights recommended in the SEP (0.5 to 5.0 g).

These deviations are minor and do not detract from the soundness of the study.

B. **Statistical Analysis:** The reviewer concurs with the results reported by the authors.

C. **Discussion/Results:** This study is scientifically sound and meets the guideline requirements for an acute toxicity test using a warmwater fish [guideline no. 72-1(a)]. Based on mean measured concentrations, the 96-hour LC_{50} of AC 299,263 was >119 mg ai/L, classifying this chemical as practically nontoxic to the bluegill sunfish. The NOEC was 119 mg ai/l.

D. **Adequacy of the Study:**

(1) **Classification:** Core.

(2) **Rationale:** N/A.

(3) **Repairability:** N/A.

15. **COMPLETION OF ONE-LINER FOR STUDY:** Yes, 6-10-93.